



Master Thesis: Stability Analysis for mm-Wave Power Amplifiers



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The recent advances in silicon-based semiconductor processes and packaging technologies enable realization of system on chip (SoC) and system in package (SiP) solutions for high-frequency applications. The demonstration of Silicon-Germanium (SiGe) HBT and CMOS integrated circuits for mm-wave applications such as 77 GHz and 79 GHz automotive radar or 60 GHz communications has given rise to the sales volume of systems built from these highly-integrated components. The only component that has been so far very challenging to realize on-chip is the power amplifier. As this component is directly exposed to external circuitries, a detailed analysis on the stability is essential to assure the functional safety of the devices. The aim of this thesis is to develop a concept for a measurement system for the stability analysis of mm-wave power amplifiers.



Task Description

- › Gathering requirements for stability analysis of state of the art mm-wave power amplifiers
- › Analyze solutions available on the market
- › Create a concept for a measurement system for large signal stability analysis of mm-wave power amplifiers and transmitter systems.

Qualification

- › Good understanding of high-frequency engineering
- › Basic know-how on RF measurements
- › Basic experience with RF simulation software (Keysight ADS, NI MWO, ...)
- › Capability to work autonomously and self-motivated

We offer

- › Monthly stipend
- › Industry environment with many experienced engineers, laboratories and access to technologies

Contact

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